

### ABSTRACT

A method of data estimation for a Time Division Duplex (TDD) Code Division Multiple Access (CDMA) system or any other system using an extended algorithm (EA) in preference to a truncated algorithm (TA). The EA avoids implementation errors by choice of proper extended matrices, and accepts the use of one piece of hardware. The EA also obviates loss of multiple signals in the tail part of each data field, and avoids errors due to transformation of a Toeplitz matrix to a circulant matrix.